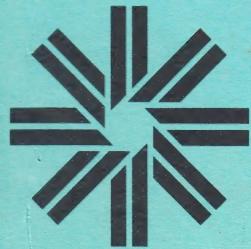


VOLT



**Model 7D/7DW**  
Operations Manual

THE PAYPHONE COMPANY

652-2318

Phone # 648-2476

**MODEL 7D/7DW**  
**COIN OPERATED TELEPHONE**  
**OPERATIONS MANUAL**  
**SOFTWARE REVISION D4.XX**

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Manual Revised 7/13/87

## **WARNING**

This pay phone should be operated on a COCOT telephone line only. Not on any other type business line. Please check with your local telephone company to be sure the line is a COCOT line. COCOT lines provide screening for collect and operator assisted calls. If the telephone company can not provide call screening, contact Amway for assistance and advice.

NOTE Amway can not support phones installed on a non COCOT line.

This device complies with part 68 of FCC Rules and Regulations.

FCC Registration #: Ringer Equivalence #:

E2E506-71118-CX-T  
1-2B

820-00003-00

ISSUED 2-04-87

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Section 1Description1-1.0 General

This manual describes the features, operation, installation, programming, and field maintenance for the model 7D and 7DW coin operated telephone. It is important that the purchaser recognize that these pay phones are not any different than any other sophisticated microprocessor based system in that it must be installed, programmed, and maintained by experienced technicians in order to provide the reliable service expected. Proper personnel training and installation planning will assure a prompt, efficient installation as well as reliable long term performance.

1-2.0 Description

The Model 7D and 7DW Pay phones are full prepay coin operated telephones intended for use in a COCOT (Customer Owned Coin Operated Telephone) environment. The advanced microprocessor technology enables the phones to duplicate the intelligence and decision making formerly contained in a telco central office. Both are housed in the industry-proven GTE 120B Coin Telephone case, secured from theft and vandalism due to its rugged all steel construction. Both incorporate rate tables for call costing in the U.S., Alaska, Hawaii, Canada, Puerto Rico, the Virgin Islands, and the Dominican Republic. Owner flexibility is maintained through the use of keypad programmable options. Rate information may be downloaded via the internal 300 Baud modem. Both are intended to be connected to a COCOT telephone line and externally powered from a 16 VAC transformer.

1-3.0 THE MODEL 7D & 7DW OPERATION

The Model 7D and 7DW are full Prepay phones, meaning that all the coins are deposited before the phone connects to the telco line.

When the handset first goes off-hook, an internally generated dial tone is heard.

The caller punches in the desired phone number using the keypad. The caller can hear the tones as the keys are depressed.

The phone number is stored in the payphone's memory.

The number is analyzed and the call cost is determined from the rate tables.

A high quality digitally recorded voice requests the required amount for the call. An optional display can show the actual cost

and the amount received. Every 5 seconds, the voice will repeat the remaining amount to be deposited.

The phone detects the coins deposited by scanning the (3) coin switches.

When the correct amount has been deposited, the phone connects to the telco line and looks for a dial tone. If a dial tone is not detected in several seconds, the voice says:

"The telephone line is not available".

At this point the microprocessor disconnects from the telco line and refunds the coinage.

When a dial tone is detected, the desired phone number held in memory is speed-dialed out.

The microprocessor monitors the phone line to determine if the line has been answered. If an answer is detected, the call cost timer is started and the microphone in the handset is unmuted.

If the phone detects a busy signal, the user hears a busy signal. When the handset is placed "On Hook", the payphone refunds the coinage.

The phone also employs special circuitry which recognizes "Special Information Tones", which precede recorded intercept messages. When this type signal is detected, the coinage is refunded when the caller hangs up.

On calls that require additional coinage for additional time, the caller is reminded of the secondary cost at 30 seconds and 15 seconds before disconnect by the voice, if the proper amount has not been deposited.

When the caller hangs up, the microprocessor energizes the coin relay to collect the coinage being held in the escrow chamber. If the escrow chamber exceeds \$3.00 during a call, the escrow chamber will be automatically collected.

## **Description of Program Functions and Features**

### **1-4.0 Time of Day and Calendar (Function 00)**

The phone contains a real time clock and calendar for those states requiring discounting of rates at night, weekends, and holidays. The time must be set for the phone to work properly.

### **1-4.1 Phone I.D. # Assignment (Function 01)**

The owner can program his own 6-digit identification number to the paystation. This number is used for accessing all information remotely or from the keypad of the phone. Function 42 allows the entering of the pay phone telephone number for use in identification of digital transmissions to remote equipment.

### **1-4.2 Callback Number (Function 02)**

The phone number to be called to report cash box dollar amount exceeded, coin box total reset, phone inactivity, or coin jam is set with option 1 of this function. Option 2 allows selecting whether the callback will be by voice or by digital transmission via the built in modem to a remote serial printer driven by a modem at 300 baud with 7 bits, even parity, and 1 stop bit. Entering all zeros for the phone number will disable the function.

### **1-4.3 211 Speed Dial for Refunds (Function 03)**

The pay phone recognizes 211 as a call for requesting a refund. The phone will speed-dial out to the number programmed into this function as a FREE call. It can be disabled by programming all zeros into the phone number.

### **1-4.4 611 Speed Dial for Service (Function 04)**

The pay phone recognizes 611 as a call for reporting service problems. The phone will speed-dial out to the number programmed into this function as a FREE call. It can be disabled by programming all zeros into the phone number.

### **1-4.5 Call On Coin Box Limit (Function 05)**

The pay phone will automatically call the number programmed into function 02 when the coin box reaches the limit programmed into this function . This feature can be defeated by the user by entering all zeros for the dollar amount.

### **1-4.6 Enable/Disable Night and Weekend Rates (Function 06)**

For those customers in states that do not require discounting at

night, weekends, and holidays, the rates can be programmed at the day time rates.

#### **1-4.7 Directory Assistance Charges for:**

- 411 (Function 07)
- 555-1212 (Function 08)
- XXX-555-1212 (Function 09)

**Note:** The CSN's (Function 20) may be used in areas in which there are different charges for different area codes. (ie. California. 411 is not to be entered as a CSN number.) CSN numbers can be disabled by putting \* or # in the charge amounts.

#### **1-4.8 FREE access to 911 emergency number**

#### **1-4.9 Coin Box and Cumulative Totals Inquiry**

Coin box and cumulative totals can be obtained from the phone using the keypad without having to open the upper housing or remotely by using another phone.

#### **1-4.10 Adjustable Answer Detection (Functions 10, 11, & 12)**

Due to many different types of central office equipment in use today, (5) adjustable parameters are provided for those "problem" locations. In most cases, these can be left at the factory settings. These functions are:

- a. Function 10 controls the local and long delay times. (See 3-3.10 and .10.1 for more detail.)
- b. Function 11 controls the attack and decay delay times. (See 3-3.11 and .11.1 for more detail.)
- c. Function 12 controls the grace period time. (See 3-3.12 for more detail.)

#### **1-4.13 0+ Credit Card Usage Fee (Function 13)**

A usage fee for 0+ credit card calling can be programmed. 0 + calls can be blocked by entering \*\* or ## for the fee.

#### **1-4.14 800 and 900 Call Usage Fee (Function 14)**

A fee for the 800 and 900 area codes can be programmed. These calls can be blocked by entering \*\* or ## for the fee.

#### **1-4.15 PBX Operation** (Function 15)

This feature has been added to allow paystation operation on a PBX system where an access number (usually 9) has to be dialed to get an outside line. This feature can be defeated by the user.

#### **1-4.16 Operator Block** (Function 16)

When this function is selected, the "0 -" calls will be blocked. (Most states require free access to the operator.) 0 + calls can still be made.

#### **1-4.16 Tone or Pulse Dialing** (Function 16)

Some telco central offices do not offer touchtone service. The phone offers an option of touchtone or pulse dialing operation.

#### **1-4.17 Reset the Coin Box Total** (Function 17)

This function accumulates the Coin box total. It can be reset using this function by entering all zeros.

#### **1-4.18 Reset Cumulative Total** (Function 18)

This function accumulates a Cumulative total until it is reset by having all zeros entered into it.

#### **1-4.19 Set The Maximum Number Of Rings** (Function 19)

This feature allows programming the maximum number of rings on outgoing calls the phone will wait before deciding a call can not be made. It also allows programming the number of rings of the phone on incoming calls before the automatic answer feature becomes operative.

#### **1-4.20 Customized Special Numbers** (Function 20)

A table of up to 60 Customized Special Numbers (CSN) can be programmed by the owner. Any number or group of numbers can be either blocked or programmed for a special rate. (With initial and secondary period capability.)

#### **1-4.21 Programmable Speed-Dial Numbers** (Functions 21 - 30)

Up to 10 numbers of up to eleven digits each can be user programmed as speed-dialed numbers. These numbers are easily recalled and dialed out using the "\*" and 0 through "9" keys. (e.g. push \* and 0.) To be free the number must be put in the CSN table.

#### **1-4.31 Inactivity Callback** (Function 31)

If there are fewer calls made in a (24) hour period than the number programmed, the phone places a call to phone number programmed in function 02 unless that number is all zeros.

#### **1-4.32 Local Call Totals** (Function 32)

This function counts and totals revenues on local calls. It also allows resetting the count and dollar amount.

#### **1-4.33 Long Distance Call Totals** (Function 33)

This function counts and totals revenues on long distance calls. It also allows resetting the count and dollar amount.

#### **1-4.34 0 -,0 + Call Totals** (Function 34)

This function counts and totals revenues on 0 - and 0 + calls. It also allows resetting the count and dollar amount. It is only active if function 38 is programmed with all zeros.

#### **1-4.35 Directory Assistance Call Totals** (Function 35)

This function counts and totals revenues on directory assistance calls except for free calls. It also allows resetting the count and dollar amount.

#### **1-4.36 Precede Non local Calls By 1** (Function 36)

This function precedes numbers beyond local area by "1", whether dialed or not. This function can be disabled.

#### **1-4.37 DTMF Speed** (Function 37)

This function allows setting the DTMF pulses to fast or slow.

#### **1-4.38 0 + and 0 - Operator Service** (Function 38)

National Telephone Service provides a means of processing operator assisted calls that gives the payphone owner a percentage of the revenues that would otherwise be missed. This function allows live operator services from National Telephone Service (if you have subscribed) for all operator assisted calls. These are the "0 plus" and "0 minus" calls.

- a. For a "0 minus" (0 -) call, the caller dials 0 and waits for the operator to come on line to process the person to person, station to station, collect, or credit card call.
- b. For a "0 plus" (0 +) call, the caller dials 0 plus the number to be called and waits for the operator to process the call (collect, credit card, etc).

This function also allows the programming of the NTS access phone number and the NTS I.D. number of the individual payphone. To take advantage of this program and functions, do the following.

- a. Obtain a model 7D or 7DW phone or retrofit kit for the older model 7D phones.
- b. Pre-subscribe to AT&T for 1+ service.
- c. Call NTS at 1-404-433-0101.

If desired, 1+ service can be arranged through MCI in cooperation with NTS (function 39 option 2).

#### **1-4.39 1 + Options** (Function 39)

This function allows the programming of one of three options for all "1 +" calls.

- a. First option allows all "1 +" calls to be processed by AT&T. (Payphone should be pre-subscribed to AT&T.)
- b. Second option allows all "1 +" calls to be processed by an OCC (Other Common Carrier) of the owner's selection by means of a programmable number (10222 is the OCC number for MCI). This option can only be used in Equal Access Areas. Contact local telco for information.
- c. Third option allows all "1 +" calls to be diverted to a programmable phone number along with an authorization code of up to 16 digits.

#### **1-4.40 Call After Cash Box Collected** (Function 40)

This function allows the enabling or disabling of the call to the phone number programmed by function 02 when the Coin Box Total has been reset.

**1-4.41 Call When Coin Switch Jammed** (Function 41)

This function allows the enabling or disabling of the call to the phone number programmed by function 02 when a coin switch is jammed.

**1-4.42 Set Location Phone Number** (Function 42)

This function allows putting the phone number of a pay phone into its memory so that digital transmissions from the phone can be identified. Each such transmission will contain the phone number.

**1-4.43 Ordering Rate Tables.**

The following information is needed when a rate table is ordered.

- a. Area Code for the pay phone.
- b. Exchange (prefix) for the pay phone.
- c. Local or other charges for the override file or the decision to accept a standard override file as part of the rate table file.

## 1-5.0 Specifications

Paystation Case:	GTE Model 120B
Size:	21 x 7.625 x 6 inches
Weight:	48 lbs.
F.C.C. Registration:	E2E506-71118-CX-T
Ringer Equivalence #:	1.2 B
Power Source:	Transformer (wall mount) 10 VA Primary: 100-130 VAC Secondary: 16 VAC
Line & Power Interface:	PCB terminal strip connections internal to the phone.
Telco Line Type:	COCOT, Loop Start
Operating Telco Loop Current:	20 mA to 90 mA
Telco Loop Supervision:	Dial Tone Busy Tone Ringback Tone Special Information Tones Reorder Tones Incoming Ring Voice
Sensitivity:	-40 dbm to 0 dbm
Coin Acceptance:	(U.S.) Nickel, Dime, Quarter
Coin Relay Output:	14 VDC
Voice Message:	Digitally Recorded Female Voice (English)
Display:	High Contrast LCD 2 line x 16 characters (Used for programming only)

**Rate Table:** Based upon Area Code (NPA)  
and Prefix (NXX).  
Stored in a remotely  
downloadable RAM chip or EPROM.

**Humidity:** 0% to 95% RH Non Condensing

**Touch Tone  
Output Speed** Slow = 150 milliseconds  
Fast = 75 milliseconds

This product is Hearing Aid Compatible (HAC) per  
Section 68.316, F.C.C. Rules and Regulations

**Note:** These Specifications are Subject to change with-  
out notice.

## Section 2 Installation

### 2-1.0 General

The Model 7D and 7DW are fully tested and quality inspected before shipment. The circuit board is rigidly mounted to a back plate for ease of installation and removal from the GTE case. The power and telco connections to the pay phone is made with a terminal strip in front of the coin relay. It is assumed that 120 VAC power is readily available, and that the telephone company has been contacted and the line has been activated prior to the installation.

### 2-2.0 Installation Planning

- a. Locate the nearest available unswitched 120 VAC outlet. The outlet should be inaccessible to discourage vandalism or theft when the transformer is mounted.
- b. Verify that the 120 VAC line is not connected to inductive loads, i.e. motors, relays, fluorescent lighting, etc. These devices will cause transients which may interfere with the performance of the phone.
- c. Determine the amount of wire and other materials for these runs.

### 2-3.0 Power and Telco Wiring

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- a. Verify that the voltage at the receptacle is greater than 95 VAC rms.
- b. Wiring from the 16 VAC transformer to the phone should conform to the following table:

Length of Run	Wire Size (awg)
Less than 50 feet	18 gauge
50 feet to 100 feet	16 gauge
Over 100 feet	Contact Customer Service

**NOTE:** Do not run the power through the same cable as the telco line. Avoid long parallel runs of power and telco lines which may induce hum into the telco line.

- c. The telco line should not be routed in close proximity to cables powering fluorescent lighting and other inductive loads.

After the telco line has been run, check it using a linesman handset for hum or static. If hum or static is detected, disconnect your run from the demarcation block and connect the handset and check for hum or static.

If it is still detected, contact the telephone company for service on that line. If the hum or static is not present on the handset, the telco wiring to the pay phone must be rerouted or is defective.

**NOTE:** Using an extension phone on the same line as the pay phone is not recommended or supported.

- d. The power line from the transformer should be routed through the hole with the grommet in the rear of the telephone case.

**NOTE:** Hum or static resulting from a poor installation will severely degrade the long term performance of the paystation.

#### **2-4.0 Mounting Preparation**

**NOTE:** In order to assure correct operation of the coin rejecter mechanism, the mounting surface for the paystation must be vertical to within 1 1/2 degrees in both directions.

- a. To verify a vertical surface: Place a spirit level vertically against the mounting surface with the top end of the level at the required height of the telephone. Move the top or bottom end of the level away from the mounting surface as required to obtain a vertical reading. When the reading is obtained, the end of the level opposite the point of contact should be no further from the mounting surface than the distances shown below:

<b>Spirit Level Length (inches)</b>	<b>Distance (inches)</b>
18	15/32
24	5/8
30	25/32
36	15/16

- b. The mounting surface must be flat and free of peaks and valleys which create gaps large enough to allow the telephone or the backboard to be pried loose. The mounting surface should be strong enough to support the paystation and the backboard. (50 pounds)
- c. Route the power and telco wiring through the hole in the center of the backboard that will align with the grommet wire opening in the back of the telephone case. (If backboard is used.)

#### **2-4.1 Paystation Mounting**

- a. Place the key in the upper housing and turn it counter clockwise. place the "T" wrench in the slot of the telephone case upper housing and turn one quarter turn clockwise. Remove the upper housing. Disconnect the keypad cable, if connected.

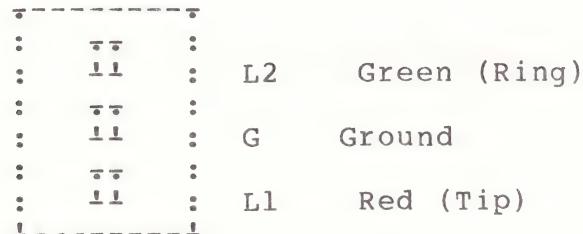
**CAUTION: THE PRINTED CIRCUIT BOARD CONTAINS STATIC SENSITIVE COMPONENTS. A STATIC BRACELET SHOULD BE WORN AND CONNECTED TO A KNOWN GROUND POINT.**

- b. Using the key, unlock the cash vault. Put the "T" wrench in the slot in the vault cover and turn one quarter clockwise and remove vault cover and cash box to expose mounting holes.
- c. Remove the screw holding the coin chute and pull the chute from the phone. Loosen the large screw holding the coin acceptor at the top of the case and remove the acceptor.
- d. If circuit board is installed, remove all connections and completely loosen the single nut which holds the pcb back plate in place. Remove the back plate by moving it out and upward to clear it of its upper retaining slot in the case.

- e. Install and tighten the four security studs in the threaded holes on the back of the telephone case. Lift the paystation and align it with the backboard. Run the power and telco lines from the backboard through the hole with the grommet in the phone case. Position the security studs over the key slots in the backboard and allow the paystation to slide down in place.
- f. Install and tighten four 1/4-20 x 1/2 machine screws at the rear of the cash vault.
- g. Insure that there is enough wire to reach the terminal block on the printed circuit board after it is secured in place.

## 2-5.0 Wiring Connections

**CAUTION: POWER SHOULD NOT BE APPLIED TO THE 16 VAC TRANSFORMER AT THIS TIME.**



Terminal strip in bottom of phone case.

### 2-5.1 Connecting the Telco Line and Ground

- a. Connect the telco line green wire (ring) to screw terminal #1 and the red wire (tip) to terminal #3 of the terminal strip.
- b. Connect earth ground to screw terminal #2 of the terminal strip. The ground can be run from a cold water pipe or third wire electrical ground.

### 2-5.2 Installation of the Circuit Board

- a. Locate the 1/4-20 stud about half way down in the case. Remove one of the hex nuts and retain to mount the PCB back plate.
- b. Locate the 1" long slot on the inside of the case about 1/2" from the top and 1" from the left side.

- c. Placing the PCB in the case at an angle, hook the back plate into the slot and allow the threaded stud to protrude through the hole at the bottom of the back plate. Secure the back plate with the nut removed in step a.

#### **2-5.3 Connecting the Printed Circuit Board**

**NOTE:** Use the enclosed circuit board drawing to locate the following connectors. These connectors fit easily in one direction only. **DO NOT FORCE!**

- a. Locate header P1 (3-pin) at the bottom of the circuit board. Plug the connector from the coin relay cable onto this header with the white wire on the right. The slots in the connector body will face downward.
- b. Locate header N1 (4-pin) on the right side of the circuit board. Plug the connector from the coin switches onto this header with the green wire on top. The slots in the connector body will be to the right.
- c. Locate connector J1 (14-pin) at the top of the circuit board. Locate and connect the ribbon cable coming from the LCD display. (The display is only used for programming.)
- d. Look at the connector on the cable coming from the keypad assembly and determine whether it mates to the S1 or the K1 connector on the circuit board. Connect it to its proper location on the circuit board. If the S1 connector is used, set SW3 to the "down" position. If the K1 connector is used, set SW3 to the "up" position.
- e. Locate header E1 at the bottom of the circuit board. Locate and connect the mating connector coming from the telco terminal strip in the bottom of the phone case.

**NOTE:** Wires to terminal strip L1 (power) should not be connected at this time.

## **2-6.0 Installation Checklist**

### **Have the following items been completed?**

- a. Earth ground connected to terminal #2.
- b. Telco line is connected and dial tone is present at the terminal strip (terminals #1 and #3) in the paystation.
- c. The 16 VAC power transformer is connected to a 120 VAC source and the secondary voltage is present at the paystation. (Should not yet be connected to circuit board.)
- d. The circuit board has been secured with the 1/4-20 nut.
- e. The keypad assembly is connected.
- f. The coin switches are connected.
- g. The coin relay is connected.
- h. The LCD display is connected.  
(used for programming only)

## **2-7.0 Installation Tests**

- a. Strip back 1/4" of insulation on each of the (2) power wires. Loosen the screws on the L1 terminal strip at the bottom of the circuit board. Place the (2) wires in the holes on the side of the terminal strip and secure by tightening the (2) screws. Verify that the wires are secured.

### **b. Hookswitch**

1. With the handset "on hook", the display should read:  
"ON HOOK".
2. With the handset "off hook", the display should read:  
"DIAL NUMBER".

**c. Keypad Test**

1. Go off hook and dial "12034567890". Verify that these digits appear on the display.
2. Go back on hook and press "\*" and "#" and verify that tones are present for each of these keys.

**d. Coin Relay**

1. With the handset "off hook", deposit at least (8) quarters. (this puts proper weight in escrow chamber)
2. Go back "on hook" and verify that the coins are **RETURNED**.
3. Repeat steps 1 & 2 several times and verify that the coin relay operation is consistent.
4. With the handset "off hook", deposit two quarters, press the reset switch, and notice that phone collects and the cash box counter and cumulative counter both increment.
5. With the handset "off hook", deposit at least (8) quarters and dial a valid local number (weather or time,etc.) Allow the phone to dial out and measure the time that passes between the microphone unmuting and the appearance of the "## THANK YOU ##" message on the display. This time period should be between 9 and 12 seconds. If it is not, contact Ernest Telecom Customer Service. Go back "on hook" and verify that the phone **COLLECTS** the coins into the coin box.
6. Repeat step #5 several times and verify that the coin relay operation is consistent.

**e. Coin Switches**

1. With the handset "off hook", dial a long distance number.
2. Wait a few seconds and the top line of the display will read:  
"DEPOSIT \$XX.XX"  
and the second line will read:  
"RECEIVED \$00.00".

3. Deposit a nickel, a dime, and a quarter and verify that the second line of the display reads:

"RECEIVED \$00.40".

**f. Microphone**

1. Dial a valid local number and, after the phone dials out, push any key four times and verify that the microphone unmutes and your voice can be heard in the earpiece.

**2-7.2 Adjusting the Sidetone Level**

- a. Dial a number and have someone hold the line during this adjustment.
- b. While speaking into the mouthpiece, adjust R62 (see attached diagram) for a comfortable listening level. If this level is too low, the speech synthesizer may be difficult to hear. Start with R62 counterclockwise.

## **Section 3 Field Programming**

### **3-1.0 Preparation for Phone Programming**

Equipment Required:

- Upper Housing Key
- "T" wrench
- LCD Display
- Upper Housing Hinge (optional)

**CAUTION: THE PRINTED CIRCUIT BOARD CONTAINS STATIC SENSITIVE COMPONENTS. A STATIC BRACELET SHOULD BE WORN AND CONNECTED TO THE TELEPHONE CASE GROUND!!!**

**CAUTION: Power must be removed before connecting LCD display.**

**Note:** Take some uninterrupted time to learn how to Program the pay phone before installation.

- a. It is necessary to remove the upper housing cover to access the circuit board in order to alter the programmable options.
- b. Unlock the upper housing using the upper housing key and a "T" wrench. Remove the housing and install the hinge, if used, for easy circuit board access. Connect the key pad ribbon cable to the circuit board, observing proper orientation.
- c. To set or change programmable options, the phone must be in what is called "Program Mode". This is done by moving the switch SW1 up to the "up" position, and momentarily depressing the reset switch, SW2. SW1 is located about 5 inches from the top of the circuit board, and about 2 inches from the right edge (just to the right of the reset switch). The phone is shipped and normally used with SW1 in the down position. (Run Mode)
- d. When SW1 is set to the "up" position and the reset button is pressed, the LCD should be blank.

### **3-2.0 Internal Programming of the Payphone Functions:**

Viewing the programmable values on the optional LCD display is accomplished by pressing the "#" key for 1 second. The display will show:

DISPLAY OPTION  
NUMBER XX

Push the two digits associated with the particular function of interest. See the following listing for functions.

Changing the values is done by pressing the "\*" key for 1 second. The display will show:

PROGRAM OPTION  
NUMBER XX

Push the two function digits. Costs are entered in cents, to the nearest nickel. Once a function is selected, values are entered from the keypad as prompted by the cursor on the LCD display.

#### **3-2.1 Programmable Function Table**

The table below shows:

- a. The function number in the left column.
- b. What the display will show in the middle column.
- c. What the input variables are in the right column.

<b><u>Function</u></b>	<b><u>DISPLAY</u></b>	<b><u>COMMENTS</u></b>
00	W MM-DD-YY HH-MM-SS	W: Day of Week, Friday = 1 MM: Month Saturday = 2 DD: Day of Month YY: Year HH: Hour (24 hour mode) MM: Minute SS: Seconds
01	I. D. NUMBER XXXXXX	Phone ID # (6 Digits) (See 3-3.1)
02	CALLBACK NUMBER X-XXX-XXX-XXXX	Number Phone Dials for MAX\$ or Service Entry (See 3-3.2)
	MESSAGE METHOD=X 0=VOICE 1= MODEM	Select 0 or 1

03	REFUND NMBR. 211 X-XXX-XXX-XXXX	Speed Dial Number for Refunds
04	REPAIR NMBR. 611 X-XXX-XXX-XXXX	Speed Dial Number for Service
05	MAXIMUM \$ AMOUNT \$XXXX.XX	Coin Box Dollar Limit for Callback
06	VARIABLE RATES = X	0=Fixed Daytime Rates 1=Enable Variable Rates (Night/Weekend) (See 3-3.6)
07	D.A. CHG.= \$00.XX FOR 411	Directory Assist Charges (See 3-3.7)
08	D.A. CHG.= \$00.XX FOR 555-1212	Directory Assist Charges for Home Area (See 3-3.8)
09	D.A. CHG.= \$00.XX FOR XXX-555-1212	Directory Assist Charges For Long Distance (See 3-3.9)
10	LOCAL DELAY= XX S LONG DELAY = XX S	(See 3-3.10) (See 3-3.10.1)
11	ATK. DLY.=0.XX S DCY. DLY.=0.XX S	(See 3-3.11) (See 3-3.11.1)
12	GRACE PRD. = XX S	(See 3-3.12)
13	CRD. CARD = \$00.XX	Phone Usage Fee For 0+ Numbers
14	(800)CHG.= \$00.XX (900)CHG.= \$00.XX	Phone Usage Fee for 800 Numbers Phone Usage Fee for 900 Numbers
15	PBX OPTION = X	"0" Disables Feature "1" allows operation on a PBX System.
	PBX NUMBER = X	Programs the outside line Access Number (See 3-3.15)
16	OPERATOR BLOCK = X TOUCH OR PULSE = X	"0" Allows, "1" Denies "0" Tone, "1" Pulse Dialing

17	COIN BOX TOTAL \$XXXX.XX	Value since last reset Enter all zeros to reset
18	CUMULATIVE TOTAL \$XXXX.XX	Value since last reset Enter all zeros to reset
19	MAX RINGS OUT = XX MAX RINGS IN = XX	Programmable numbers (See 3-3.19)
20	XXX-XXX-XXXX X D.CC/MM D.CC/MM	Customized Special Numbers (See 3-3.20)
21	SPEED DIAL # 0 X-XXX-XXX-XXXX	Speed Dial Numbers (See 3-3.20)
22	SPEED DIAL # 1 X-XXX-XXX-XXXX	
23	SPEED DIAL # 2 X-XXX-XXX-XXXX	
24	SPEED DIAL # 3 X-XXX-XXX-XXXX	
25	SPEED DIAL # 4 X-XXX-XXX-XXXX	
26	SPEED DIAL # 5 X-XXX-XXX-XXXX	
27	SPEED DIAL # 6 X-XXX-XXX-XXXX	
28	SPEED DIAL # 7 X-XXX-XXX-XXXX	
29	SPEED DIAL # 8 X-XXX-XXX-XXXX	
30	SPEED DIAL # 9 X-XXX-XXX-XXXX	
31	MINIMUM NUMBER OF CALLS/DAY =XX	Inactivity Call Back (See 3-3.31)
32	LCL. CALLS = XXXX \$XXXX.XX	Counts Local Calls & Collected \$ Amt. (See 3-3.32)
33	L.D. CALLS = XXXX \$XXXX.XX	Counts L.D. Calls & Collected \$ Amt. (See 3-3.33)

34	<b>Ø-, Ø+ CALLS = XXXX \$XXXX.XX</b>	Counts Ø-, Ø+ Calls & Collected \$ Amt. (See 3-3.34)
35	<b>D.A. CALLS = XXXX \$XXXX.XX</b>	Counts D.A. Calls & Collected \$ Amt. (See 3-3.35)
36	<b>PRECEDE NON LOCAL NUMBERS BY 1 = X</b>	Adds '1' to Numbers Outside Local Area. (See 3-3.36)
37	<b>DTMF SPEED = X Ø=FAST 1=SLOW</b>	Selects Fast or Slow DTMF Pulse.
38	<b>O.S. I.D. = XXXXXX X-XXX-XXX-XXXX</b>	Select 1 for AT&T. Select 1 for Alternate Operator Services. e.g. NTS (See 3-3.38)
39	<b>Long Distance Call Options = X</b>	(See 3-3.39)
40	<b>Call After Cash Box Collected = X</b>	1 Selects or Ø Inhibits (See 3-3.40)
41	<b>Call When Coin Switch Jammed = X</b>	1 Selects or Ø Inhibits (See 3-3.41)
42	<b>LOCATION PHONE # XXX-XXX-XXXX</b>	Identify Pay Phone

To end the programming sequence, simply place SW1 to the Down or Off position.

## Function Programming

### 3-3.0 Time of Day and Calendar (Function 00)

This function allows setting the day of week (Friday = 1), date (e.g. 01-07-87), and time (e.g. 13:15:30). Follow the instructions in 3-2.0 and the function table in 3-2.1 above.

### 3-3.1 Phone ID Number (Function 01)

This is a 6-digit number assignable by the owner to identify a particular phone. Follow the instructions in 3-2.0 and the function table in 3-2.1 above.

### 3-3.2 Callback Phone Number (Function 02)

The phone number for the callback option is in the format of an 11-digit long distance number. To call 7 and 8 digit numbers, replace the unused digits with a "\*" or a "#" as shown in the following examples:

- a. Local Call. \*-\*\*\*-234-5678 or #-###-234-5678. \* and # act as "wild digits".
- b. Not local, same area code and a 1 must be dialed. 1-\*\*\*-234-5678 or 1-###-234-5678.
- c. Diferant area code. 1-221-234-5678.

Entering 0-000-000-0000 defeats the callback option. (Defeats callback on MAX \$, COIN BOX TOTAL RESET, and other service codes.)

Option 2 of this function allows selecting Voice or digital transmission via the built in modem to a remote modem driving a serial printer to provide a hard copy of the messages. Enter 0 for voice transmission or 1 for digital transmission.

Follow the instructions in 3-2.0 and the function table in 3-2.1 above.

### 3-3.3 Refund Number 211 (Function 03)

The phone number for refund calls is entered in this function. If the call is a local call, use wild digits (\*) or (#) as needed to fill the number. The examples given in paragraph 3-3.2 also apply to the refund number. If all zeros are entered into the number, 211 calls are disabled. If 211 is dialed, the voice will say:

"The number you have dialed is an invalid number."  
Follow the instructions in 3-2.0 and the table in 3-2.1 above.

#### **3-3.4 Repair Number 611 (Function 04)**

The phone number to be called for repair service is entered in this function. If the call is a local call, use wild digits (\*) or (#) as needed to fill the number. The examples given in paragraph 3-3.2 also apply to the refund number. In some states, 611 is a public service number for any phone line repair call. If it is needed, use \*---611-1111. To block this number, enter all zeros. If 611 is dialed the voice will say:

"The number you have dialed is an invalid number."

Follow the instructions in 3-2.0 and the table in 3-2.1 above.

#### **3-3.5 MAX. \$XXXX.XX (Function 05)**

The MAX. \$XXXX.XX = is the maximum dollar limit of the coin box total at which the phone will call the number programmed in function 02 and inform the owner that collection is necessary. To defeat this feature, program in \$0000.00. Follow the instructions in 3-2.0 and the table in 3-2.1 above.

#### **3-3.6 VARIABLE RATES (Function 06)**

The VARIABLE RATES function allows the owner to fix all rates to daytime rates by programming "0", or allow discounted rates for nights, weekends, and holidays by programming a "1" into this location. Follow the instructions in 3-2.0 and the table in 3-2.1 above.

**NOTE:** Some states' tariffs require the discounted rates for nights, weekends, and holidays.

#### **3-3.7 Directory Assistance Charges (Functions 07, 08, and 09)**

DIRECTORY ASSISTANCE has (3) sections:

- (A) 411                  Charges (Function 07)
- (B) 555-1212            Charges (Function 08)
- (C) XXX-555-1212      Charges (Function 09).

Functions 07, 08, and 09 allow for different charges for the different types of directory calls. Follow the instructions in 3-2.0 and the table in 3-2.1 above.

**Note:** If different area codes require different Directory Assistance rates use the CSN's for the special cases. Do not use a CSN for 411. In some area codes a "1" must be dialed before 411 or 555-1212. The phone will handle all directory assistance calls. These calls can be blocked by entering \*\* or ## for the charge amount.

### **3-3.10 LOCAL DELAY (Function 10)**

This value differs depending upon the type of central office to which the paystation is connected. Typical settings:

Crossbar: 04 SECONDS  
ESS: 01 SECONDS

This value delays answer detection after the number has been dialed out to the central office to avoid the possibility of false detection due to line switching clicks.

### **3-3.10.1 LONG DELAY (Function 10)**

This value is similar in function to the Local Delay but is not so much a function of the local central office. It is active only when long distance calls are dialed.

A Typical Value is: .08 seconds.

The Range is: 00 to 25 seconds (Values outside this range will default to 00 second.) Improper setting of the local and long delays will cause an obvious delay in the microphone being unmuted. Follow the instructions in 3-2.0 and in table 3-2.1 above.

### **3-3.11 ATK. DLY. (Attack Delay) (Function 11)**

This option provides a way of varying the answer detection sensitivity for a particular location.

A typical setting is: .08 seconds.

Lowering this value increases the detection sensitivity. The phone will make the decision to collect the money more quickly at lower settings. (Consult Customer Service for more information.) Follow the instructions in 3-2.0 and the table in 3-2.1 above.

### **3-3.11.1 DCY. DLY. (Decay Delay) (Function 11)**

This option is very similar to the "ATK. DLY.", but has a slightly different effect on answer detection.

A typical setting is: .08 second.

Lowering this value increases the detection sensitivity. Follow the instructions in 3-2.0 and the table in 3-2.1 above. Set between .06 and .9 second.

**Note:** For most locations the typical settings will prove to be most satisfactory for answer detection. It should only be necessary to change these values for extreme problem locations. The Attack and Decay delays should be set at the same values. Consult the factory for assistance.

### **3-3.12 GRACE PRD. (Function 12)**

A "Grace Period" is provided after the microphone unmutes to allow the caller to go back on-hook and have the money refunded. This is useful in areas where there are recorded messages by the phone company which are not preceded by "Special Information Tones".

A typical setting is: 00 seconds. (Other circuitry provides 3 to 5 seconds delay).

Follow the instructions in 3-2.0 and the table in 3-2.1 above.

**CAUTION: IF THIS VALUE IS MADE TOO LARGE, IT WILL ALLOW THE CALLER TO PLACE A FREE CALL IN THIS PERIOD OF TIME.**

### **3-3.13 Credit Card Fee (Function 13)**

A fee may be charged for making "0+" calls. The dollar amount is entered in this function. Credit card calls may be blocked by entering \*\* or ## for the fee. Follow the instructions in 3-2.0 and the table in 3-2.1 above.

### **3-3.14 800 and 900 Call Fees (Function 14)**

This function allows setting the fee, if any, to be charged for making calls to either the 800 or 900 calls. These calls may be blocked by entering \*\* or ## for the fee. Follow the instructions in 3-2.0 and the table in 3-2.1 above.

### **3-3.15 PBX Operation (Function 15)**

On occasion, it is necessary to operate the paystation on a PBX system. A PBX requires that a single digit (usually a 9) be dialed to get a second dial tone to access an outside line. A "1" entered into the PBX OPTION location allows the programming of this single access digit. A "0" in PBX OPTION will disable this feature and if a display is used, it will read:

**"NOT A PBX SYSTEM".**

NOTE: For most applications this feature will be disabled. Follow the instructions in 3-2.0 and the table in 3-2.1 above.

### **3-3.16 Operator Block (Function 16)**

Enter a "1" into this function to deny access to all "0 -" calls. Enter a "0" to enable these calls. Blocking this function does not block 0 + calls. Follow the instructions in 3-2.0 and the table in 3-2.1 above.

#### **3-3.16.1 Touch or Pulse Dialing (Function 16)**

Enter a "1" in this function for pulse dialing and a "0" for touchtone (DTMF) dialing. Follow the instructions in 3-2.0 and the table in 3-2.1 above.

### **3-3.17 Reset Coin Box Total (Function 17)**

This function allows entering a dollar value. Normally, it will be used to reset the Coin Box Total, by entering a zero dollar value. Follow the instructions in 3-2.0 and the table in 3-2.1 above. This function does not reset the Cumulative Total.

### **3-3.18 Reset Cumulative total (Function 18)**

This function allows entering a dollar value. Normally it will be used to reset the Cumulative Total by entering a zero dollar value. Follow the instructions in 3-2.0 and the table in 3-2.1.

### **3-3.19 Maximum Rings In and Out (Function 19)**

This function allows setting the number of times the called phone will be rung before the payphone will hang up and return the coins. It also allows setting the number of times the payphone will ring before automatically sending an answer tone for remote reading of the Coin Box Total and the Cumulative Money total, from another phone. Follow the instructions in 3-2.0 and the table in 3-2.1.

### **3-3.20 Customized Special Numbers (Function 20)**

This function allows for 60 Customized Special Numbers (CSN) which can be selectively programmed with custom rates for a single phone number or group of numbers. The CSN function can also be used to "Block" any number or group of numbers.

When viewing the CSN table using "#20", an editing menu will appear on the display which will allow EDITING of any of the (60) CSN's. The menu displays the following commands:

1=D      2=R      3=A      4=SB  
5=C      6=E      \*=B      #=SF

(SEE SECTION 3-3.20.1 FOR A DESCRIPTION.)

#### **CSN Examples**

The following example should serve to make clear how to enter CSN numbers.

##### **a. Example #1: Special Charges.**

To program a CSN with a prefix 976 (i.e., (404) 976-XXXX) with \$.50 for 1 minute initial and \$.25 per additional 1 minute period, make sure the phone is in the program mode as described in paragraph 3-2.0. Enter "#203" for a new CSN.

a. The display will show:

XXX-XXX-XXXX X  
D.CC/MM D.CC/MM

1. The XXX-XXX-XXXX is for the phone number.
2. The single X is entered as a 0 if the number is not blocked or a 1 if the number is blocked.
3. The first D is for the dollar amount for the initial time.
4. The first CC is for the cents for the initial time.
5. The first MM is for the minutes of the initial time.
6. The second D is for the dollar amount for the secondary time.
7. The second CC is for the cents for the secondary time.

8. The second MM is for the minutes in each unit of secondary time period.
- b. Enter 404-976-\*\*\*\* (Either \* or # can be entered as a "Wild Digit")
- c. Enter 0 (Do Not Block)
- d. Enter 05001 and 02501

This will cause any 10 digit number with a 404-976 Area Code / Prefix to be charged \$.50 for the first minute and \$.25 for each additional minute. The "wild digits" can be used in the place of any or all of the 7 digits of the CSN.

**b. Example #2: Free Calls.**

To program a CSN of 404-249-9200 to be a free call (e.g., Emergency Number). Put the phone in the programming mode (see 3-2.0). Enter "#203" for a new CSN.

- a. The display will show:

XXX-XXX-XXXX X  
D.CC/MM D.CC/MM

- b. Enter 4042499200.
- c. Enter 0 (do not block).
- d. Enter 00001 and 00001

**c. Example #3: Clear CSN table.**

To clear all CSN's and disable the CSN options. Put the phone in the programming mode (see 3-2.0).

- a. Push the "#", "2", and "0" keys. The display will show:

1=D 2=R 3=A 4=SB  
5=C 6=E \*=B #=SF

If it does not, push the "\*" key. Then the above display will show. Enter 5.

**d. Example #4: Block numbers.**

Suppose it is desirable to block the number 404-973-9094 from being called. Put the phone in the program mode (see 3-2.0).

a. Enter "#203 for a new CSN. The display will show:

XXX-XXX-XXXX X  
D.CC/MM D.CC/MM

b. Enter 4049739094.

c. Enter 1 (Block this Number)

d. The display will read:

\*\*\*\*\* BLOCKED \*\*\*\*\*

**e. Example #5: Untimed call.**

To program a CSN of 718-976-5555 to be an untimed call with a charge of \$0.25. Put the phone in the program mode (see 3-2.0).

a. Enter "#203" for a new CSN. The display will show:

XXX-XXX-XXXX X  
D.CC/MM D.CC/MM

b. Enter 7189765555.

c. Enter 0 (not blocked)

d. Enter 02501 and 00001.

If the secondary period is set for 00, the phone will hang up at the end of the primary period.

\*\*\*\*\* WARNING \*\*\*\*\*

**f. Area Code 905 and 706 (Mexico)**

In some areas, calls to area codes 905 and 706 are treated as local calls by the rate tables. Amway is now sending all payphones out with these two area codes blocked. To block these in a phone that does not have them blocked, put the phone in the program mode (see 3-2.0).

a. Enter "#203 for a new CSN. The display will show:

XXX-XXX-XXXX X  
D.CC/MM D.CC/MM

b. Enter 905\*\*\*\*\*.

c. Enter 1 (block this area code). The display will show:

\*\*\*\*\* BLOCKED \*\*\*\*\*

d. Enter "#203" for a new CSN. The display will show:

XXX-XXX-XXXX X  
D.CC/MM D.CC/MM

e. Enter 706\*\*\*\*\*.

f. Enter 1 (block this area code). The display will show:

\*\*\*\*\* BLOCKED \*\*\*\*\*

### 3-3.20.1 Editing the CSN Table

This feature allows editing of the CSN table in the event that an error has been made during programming or if changes or additions to the table are required. When in the "Program" mode, press "#20" and the following editing menu commands will be displayed:

1=D      2=R      3=A      4=SB  
5=C      6=E      \*=B      #=SF

#### **Editing Commands**

1 = D	Delete the currently displayed CSN.
2 = R	Replace the currently displayed CSN.
3 = A	Add a new CSN to the end of the table.
4 = SB	Scroll back and display the previous CSN.
5 = C	Clear the entire CSN table.
6 = E	End this editing session.
* = B	Toggle between this menu and current CSN.
# = SF	Scroll forward and display the next CSN.

**Note:** When using the editing menu, insure that the correct CSN is being edited by using the "\*" key (\* = B) to toggle between the menu and the current CSN.

#### **a. 1 = D Delete the currently displayed CSN.**

Choosing this command will cause the currently displayed CSN to be deleted and automatically scroll forward and display the next CSN. If the last CSN is deleted, the Help menu will be displayed.

**b. 2 = R Replace the currently displayed CSN.**

Choosing this command will allow the replacement of the currently displayed CSN with new information. A blank CSN template will be displayed. Using the blinking cursor, a new CSN can be entered.

**c. 3 = A Add a CSN to the end of the table.**

Choosing this command will cause a blank CSN template to be displayed. Using the blinking cursor, a new CSN can be entered. This CSN will be added to the end of the CSN table.

**d. 4 = SB Scroll Back and display the previous CSN.**

Choosing this command will cause the previous CSN to be displayed. If there is not a previous CSN, then the same CSN will be displayed.

**e. 5 = C Clear the entire CSN table.**

Choosing this command will CLEAR all CSN information from the table. Once cleared using this command, the table must be rebuilt from scratch.

**f. 6 = E End this editing session.**

Choosing this command will allow you to end the CSN editing session. When "6" is pressed, the display will "freeze" and the phone will wait for either a "#" or "\*" to display or program other functions.

**g. \* = B Toggle between this menu and current CSN.**

This command will toggle between the editing menu and the currently selected CSN. Once the editing commands are learned, it is not necessary to view the menu.

**h. # = SF Scroll Forward and display the next CSN.**

Choosing this command will cause the next CSN to be displayed. If this happens to be the last CSN in the table it will not change.

Tip #1: Take time prior to the installation to become very familiar with the CSN editing menu.

Tip #2: Once the editing commands are learned, it is not necessary to toggle between the menu and the currently displayed CSN during an editing session.

### **3-3.21 Speed Dial Numbers** (Functions 21 to 30)

These functions are programmable numbers that are speed-dialed out when addressed. The numbers can be up to eleven digits in length. The numbers are accessed by depressing the asterisk (\*) and the single digit associated with the desired Speed Dial Number (i.e. 0 through 9). Entering zeros, "\*", or "#" will set a function to not dial out.

#### **3-3.21.1 Speed Dial Example**

To set up a Speed Dial number, put the phone in program mode as described in 3-2.0. Push "\*" and the number for the Speed Dial function (21 to 30). Assume 21 for this example. The display will show:

SPEED DIAL # 0  
X-XXX-XXX-XXXX

- a. Enter the number you want Speed Dialed (e.g. 448-2111 emergency ambulance which will be dialed by entering \*0). Enter \*\*\*\*4482111.
- b. Note that this is a local number. If the Speed Dial number is a long distance number, you would enter "1" and the area code.

NOTE: These calls are not free unless so programmed as a CSN.

### **3-3.31 Minimum Number Of Calls/Day** (Function 31)

The number of calls made in a day is checked at midnight each day. If the number of calls serviced in the prior 24 hour period is less than the number entered in this function, the phone will dial the callback number and, when answered, the voice synthesizer will say:

"SERVICE ENTRY CODE 2 I.D. NUMBER XXXXXX"

This call will be made between the hours of 9:00 AM and 9:00 PM. If the call is not completed (ie. busy, no answer), it will be retried at 10 minute intervals until the call is completed. This feature is intended to alert the owner that phone inactivity due to problems such as handset damage, etc., has occurred. It can be defeated by entering 00 into the function. Follow the instructions in 3-2.0 and the table in 3-2.1 above.

### **3-3.32 Local Calls Counter (Function 32)**

This function is a cumulative LOCAL call counter and totalizer. It totals the number of local calls made and the amount of money deposited for these local calls since the last time the function was reset. It should be initialized at zero at installation. This counter is only accessible while in PROGRAM MODE. (It is not accessible from the keypad outside the phone.) To initialize this counter at installation:

- a. Put the phone into program mode (see 3-2.0).
- b. Enter 32 on the keypad. The display will show:

LCL. CALLS=XXXX  
\$XXXX.XX

- c. Push the "0" key until each "X" on the display is replaced with a "0".

### **3-3.33 Long Distance Calls Counter (Function 33)**

This function is a cumulative LONG DISTANCE call counter and totalizer. It totals the number of long distance calls made and the amount of money deposited for these calls since the last time the function was reset. It should be initialized to zero at installation. This counter is only accessible while in PROGRAM MODE. To initialize this counter at installation:

- a. Put the phone in program mode (see 3-2.0).
- b. Enter 33 on the keypad. The display will show:

L.D. CALLS=XXXX  
\$XXXX.XX

- c. Push the "0" key until each "X" on the display is replaced with a "0".

### **3-3.34 0 -,0 + Calls Counter (Function 34)**

This function is a cumulative counter and totalizer of credit card and operator-assisted calls. It totals the number of calls and the money collected since the last time the counter was reset. It should be initialized to zero at installation. This counter is only accessible while in PROGRAM MODE. To initialize this counter at installation:

- a. Put the phone in program mode (see 3-2.0).
- b. Enter 34 on the keypad. The display will show:

0-, 0+CALLS=XXXX  
\$XXXX.XX

- c. Push the "0" key until each "X" on the display is replaced with a "0".

### **3-3.35 Directory Assistance Calls Counter (Function 35)**

This function is a cumulative DIRECTORY ASSISTANCE call counter and totalizer. It totals the number of directory assistance calls and the amount of money deposited for these calls. This includes 411, 555-1212, and 1-(XXX)-555-1212 calls. It should be initialized to zero at installation. This counter is only accessible while in PROGRAM MODE. To initialize this counter at installation:

- a. Put the phone in program mode (see 3-2.0).
- b. Enter 35 on the keypad. The display will show:

D.A.CALLS =XXXX  
\$XXXX.XX

- c. Push the "0" key until each "X" on the display is replaced with a "0".

### **3-3.36 Precede Non Local Numbers BY 1 (Function 36)**

Some locations require that a "1" be dialed preceding numbers beyond the local area. When this function is enabled, the "1" is automatically dialed in the situations where required, regardless of whether the caller has dialed it or not. This function can be enabled by entering "1" and disabled by entering "0". Follow the instructions in 3-2.0 and the table in 3-2.1 above.

### **3-3.37 DTMF Speed (Function 37)**

Two pulse speeds are provided for DTMF tones. In the "slow" mode, the pulses are on for 150 msec. and off for 75 msec. In "fast" mode, the pulses are on for 75 msec. and off for 50 msec. Use the slow mode in areas with older central offices. Follow the

instructions in 3-2.0 and the table in 3-2.1 above. Enter "0" for fast mode or "1" for slow mode.

### **3-3.38 0 + and 0 - Operator Services (Function 38)**

Follow the instructions in 3-2.0 and in table 3-2.1 above. Push the 3 and 8 keys on the keypad. The display will show:

0 -, + CALL OPTION

(0 = BELL 1 = AOS) X

If you push the 1 key, the display will show:

AOS ANI/ID #

XXXXXXXXXXXXXXXXXX

Enter your 6 digit NTS I. D. number followed by 10 \* or # key pushes. The display will show:

AOS PHONE NUMBER

X-XXX-XXX-XXXX

Enter the AOS access phone number assigned by National Telephone Service (NTS) e.g. 1-800-555-5555. \* or # can be used for the 1 or area code if they are not needed. If operator services are not used, enter zeros for the I.D. and access phone number. If you push the 0 key instead of the 1 key, the display will show:

OPERATING BELL

This selection will cause all 0 + and 0 - calls to be routed as dialed.

### **3-3.39 1 + Options (Function 39)**

- a. Follow the instructions in 3-2.0. Push "\*" for one second. The display will show:

PROGRAM OPTION  
NUMBER XX

- b. Push "3" and "9". The display will show:

1+ CALL (0=AT&T  
1=OCC 2=SWITCH)X

- c. If you push "0" the display will show:

AT&T

All 1+ calls will be routed through the long distance carrier you have the phone subscribed to. This is frequently AT&T.

- d. If you push "1" the display will show:

OCC ACCESS NMBR.  
XXXXX

Enter the OCC number. e.g. 10288 is AT&T, 10777 is Sprint, and 10222 is MCI. All 1 + calls will be routed through the carrier selected by the OCC number.

- e. If you enter "2" the display will show:

SWITCH SERV. ID#  
XXXXXXXXXXXXXXXXXX

Enter the authorization number you received from your switch service company. Use wild digit numbers \* or # to fill the 16 digits, if needed.

- f. The display will now show:

SWITCH PHONE #  
X-XXX-XXX-XXXX

Enter the switch access number.

**3-3.40 Call After Cash Box Collected** (Function 40)

Enter "1" to enable this function or "0" to disable it. Follow the instructions in 3-2.0 and the table in 3-2.1 above.

**3-3.41 Call When Coin Switch Jammed** (Function 41)

Enter "1" to enable or "0" to disable this function. Follow the instructions in 3-2.0 and the table in 3-2.1 above.

**3-3.42 Set Location Phone Number** (Function 42)

This function programs the pay phone number for use in identifying service messages sent to the "call back" number set in function 02. This will provide identification of digital messages sent to a printer or computer. Follow the instructions in 3-2.0 and the table in 3-2.1 above.

## External Programming Features (Keypad Operations)

### Single Asterisk Operation (\*)

#### 3-4.0 Coin Box Total

The contents of the resetable money counter (Coin Box Total) can be obtained from the outside of the phone using the voice synthesizer. While the phone is on-hook, press "\*" followed by the Phone I.D. Number. (Each digit must be pressed within 15 seconds.) Pick up the handset. The voice synthesizer will quote the total collected money since the last time the Coin Box Total was reset to \$0000.00. Push the "\*" key. The voice synthesizer will quote the cumulative total since the cumulative total was last set to \$0000.00.

Example: Suppose the total money collected is \$151.45 and the cumulative total is 267.35. The voice synthesizer will say:

"THE CURRENT TOTAL IS ONE HUNDRED FIFTY ONE DOLLARS AND FORTY FIVE CENTS."

When the "\*" key is pressed the second time, the voice synthesizer will say:

"THE CUMULATIVE TOTAL IS TWO HUNDRED SIXTY SEVEN DOLLARS AND THIRTY FIVE CENTS."

Each time the "\*" key is pressed, the voice will alternate between the cash box total and the cumulative total. One of them will be announced for each push of the "\*" key. If a display is connected, the same information as the voice gives will be displayed.

#### 3-4.1 Resetting the Coin Box Total

With the handset on hook, press "#" and the six-digit Phone I.D. Number. (Each digit must be pressed within 15 seconds.) Each time the coin box total is reset, the paystation will place a call to the phone number programmed into function 02. The voice synthesizer will say:

"SERVICE ENTRY CODE 1".  
"I. D. NUMBER XXXXXX"

Then the coin box total. This will be repeated (3) times. If the number is busy, or does not answer, it will retry every (10) minutes until the call is completed. The callback feature is defeated if the callback number programmed in function 02 is all zeroes.

### **3-4.2 Cumulative Money Total**

To obtain the contents of the Cumulative Money Total, first get the contents of the coin box total in step 3-4.0. Within 10 seconds press "\*" and the synthesizer will quote the contents of this total in dollars and cents.

### **Double Asterisk Mode (\*\*)**

#### **3-4.3 Coin Box Total/Cumulative Total (Selection 1)**

While the phone is on hook, press the "\*" key twice. If a display is being used, it will show:

KEYPAD MODE  
ENTER I.D. NUMBER

Enter in the six-digit I.D. Number for the phone. The display will show:

KEYPAD MODE  
ENTER SELECTION

To obtain the Coin Box Total, depress "1". The display will show:

COIN BOX TOTAL  
\$XXXX.XX

Pick up the handset. The synthesizer will quote the total in dollars and cents. To obtain the cumulative total, press the "\*" key again. The display will show:

CUMULATIVE TOTAL  
\$XXXX.XX

The synthesizer will quote the cumulative total in dollars and cents. Each time the "\*" key is pushed, the voice will alternately say the cash box total or the cumulative total.

### **3-4.4 Rate Information Contents (Selection 2)**

To determine the exact rate table information and date of creation, follow section 3-4.3 until entering the selection. At that time, enter "2". The display, if used, will show:

"NPA=XXX                    (Area Code)  
      NXX=XXX".              (Prefix)

The voice synthesizer will quote six digits, the first three being the area code of the rate table and the second three being the prefix. After getting this information, depress "\*" again. The display, if used, will show:

"DATE: MM-DD-YY".

The synthesizer will quote the creation date of the table.

**NOTE:** The NXX (prefix) quoted may be different than the one specified if the rates are the same through the same central office.

#### Software Version (Selection 4)

To determine the version of the software program, follow section 3-4.3 until entering the selection. At that time, enter "4". If a display is used, it will show:

VERSION D4.XX

The synthesizer will quote the three digits of the version number, such as "Four One One".

### **3-4.5 Automatic Call Back**

There are several situations in which the phone will call the owner to convey necessary service or collection information.

#### a. COIN BOX FULL

The paystation will attempt to call when the coin box total exceeds the amount programmed in function 05. It will call twice a day until the Coin Box Total has been reset to \$0000.00 as described in section 3-4.1. The paystation will call once during the hours of midnight to 5 P.M. and once during the hours of 5 P.M. to 11:59 P.M. The voice synthesizer will say:

"THE MAXIMUM DOLLAR AMOUNT IS EXCEEDED ID NUMBER XXXXXX",

and repeat it (3) times. In the event of a busy number, it will try again every (10) minutes. The Call Back on Coin Box Full Feature can be disabled by programming function 05 to \$9999.99.

#### b. COIN BOX TOTAL RESET (Collection)

The paystation will attempt to call once each time the Coin Box Total is reset to zero to alert the owner of exactly when collection is taking place. When the call is answered, the voice synthesizer will say:

"SERVICE ENTRY CODE 1 I.D. NUMBER XXXXXX",  
(And amount collected when reset.)

This will be repeated three times. If the call is unanswered or busy, it will be retried every (10) minutes until completed.

**c. INACTIVITY**

The paystation will attempt to call once every 24 hours when the number of calls serviced in a (24) hour period is less than the number programmed in function 31. This is checked at midnight each day. When the call is answered, the voice synthesizer will say:

"SERVICE ENTRY CODE 2 I.D. NUMBER XXXXXX",

This will be repeated three times. If the call is unanswered or busy, it will be retried every (10) minutes until completed. The call will be made between 9:00 AM and 9:00 PM.

**d. COIN SWITCH JAM**

The paystation will attempt to call when a mechanical coin jam occurs in the coin switches. When the call is answered, the voice synthesizer will say:

"SERVICE ENTRY CODE 3 I.D. NUMBER XXXXXX",

This will be repeated three times. If the call is unanswered or busy, it will be retried every (10) minutes until completed.

**e. CALLBACK DEFEAT**

The Callback feature can be totally defeated by entering all zeroes in the function 02 callback phone number.

**Callback Service Codes**

SERVICE ENTRY CODE 1      Coin box total being reset.

SERVICE ENTRY CODE 2      Inactivity callback.

SERVICE ENTRY CODE 3      Coin switch jam callback.

### **3-4.6 Remote Access of Coin Box Totals**

The coin box total can also be obtained by calling the pay phone and allowing it to ring until the paystation answers. A short "Beep" tone will be heard at which time the caller should depress the "\*" key and the Phone I.D. Number (programmed by function 01). The pay phone will respond with the coin box total using the voice synthesizer to give the total. This will be followed by a "Beep". The Cumulative Total can be obtained by depressing the "\*" key immediately after the "Beep". The Cumulative total will be quoted followed by a "Beep". The coin box total and the cumulative total can be obtained alternately by pushing the "\*" key after each "Beep". This can be repeated as many times as desired.

## **Section 4**

### **Rate Tables**

#### **4-1.0 Rate Tables and Rate Table Updates**

The pay phone, when purchased, comes with a set of rate tables installed in memory. This memory normally consists of Random Access Memory (RAM), but can be provided as Erasable Programmable Read Only Memory (EPROM).

If rate table updates are required, they should be ordered directly from Amway. The following information is required.

- a. Area Code of phone location.
- b. Exchange (prefix) of phone location.
- c. Whether a standard override file should be used. If not, what values in initial periods, secondary periods, and charges are desired.

If the rate table is in EPROM memory, an updated memory chip will be shipped to the owner of the payphone for installation.

## Section 5 Troubleshooting

### 5-1.0 Troubleshooting Table

Symptom	Check These.....
-No Manufactured Dial Tone.	-16 VAC Power at the L1 connector. -Hookswitch not connected at keypad assembly. -Keypad not connected properly.
-Loud Buzz in Earpiece.	-Low voltage to phone at L1. -Should be 14-17 VAC. -Proper case grounding.
-Keypad Inactive.	-Upper cable not connected. -PCB Defective.
-Missing Tones on the Keypad.	-Defective Keypad Assembly.
-Manufactured Dial Tone present, but no telco dial tone when the reset button is depressed.	-Telco line not connected. -Problem with telco line.
-Voice Synthesizer says "The number you have reached is an invalid number."	-Customized Special Numbers have been incorrectly programmed. -Real time clock has not been programmed. -Customized Special Numbers is causing these numbers to be "BLOCKED".
-All rates are incorrect.	-Real Time clock has not been set correctly. -Rate Table Prefix is incorrect. -Customized Override Table in the Rate Table is incorrect.

Symptom	Check these.....
-Rates for certain prefixes are incorrect.	-These Prefixes are missing from the rate table. (Can be added using the CSN function.)
-Local rates for the "Initial" and "Secondary" period are incorrect.	-Customized Override table was not specified when the phone was purchased.  -Customized Override table is incorrect.
-Phone will not detect coins being deposited.	-Coin Switches have not been connected.  -Coin Switch contacts are dirty or bent.
-Phone will not dial out after the proper amount has been deposited.	-The Telco line has been disconnected or is inactive. (Press the Reset Button and listen for Telco dial tone)
-Phone dials out but the called number never rings.	-Defective PCB.  -Noise on the line.  -Central Office does not accept Touchtone dialing.  -Defective PCB.
-The microphone unmutes immediately after the phone dials out.	-Noise or Hum on the line. (Hum can be caused by installation problems or by the Central Office)
-Phone will not recognize recorded intercept messages.	-Answer detection programmed to be too sensitive.  -The Central Office did not precede the message with "Special Information Tones".  -Distorted "Special Information Tones" are being sent by the Central Office.  -Defective PCB.

Symptom	Check these.....
-Phone will not Unmute or is delayed when the called party answers.	<ul style="list-style-type: none"> <li>-Local or Long Distance Delays have been set too long (see programming section).</li> <li>-"ATK" AND "DCY" Delays are incorrectly set.</li> </ul>
-Unmutes on a "Busy" signal and collects coins on hang-up.	<ul style="list-style-type: none"> <li>-Telco line levels are low. (Contact Customer Service)</li> <li>-Distorted Busy signal from the Central Office.</li> <li>-Loud clicks, noise, or hum present on the line.</li> <li>-"ATK" Delay improperly set.</li> <li>-"GRACE PRD." is too short.</li> </ul>
-The Microphone unmutes on "Ringback" before the called party answers and collects coins on hang-up.	<ul style="list-style-type: none"> <li>-Distorted or out of cadence signal from Central Office.</li> <li>-"ATK"/"DCY" improperly set.</li> <li>-Loud clicks, noise, or hum present on the line.</li> <li>-"GRACE PRD." set too long.</li> </ul>
-Refunds coins after call has been established and conversation has taken place	<ul style="list-style-type: none"> <li>-Coin relay defective or improperly connected.</li> </ul>
-Collect and Refund of coins is reversed.	<ul style="list-style-type: none"> <li>-Coin Relay is defective.</li> <li>-Relay wiring reversed.</li> </ul>
-Collect and Refund of coins is intermittent.	<ul style="list-style-type: none"> <li>-Coin Relay requires maintenance.</li> <li>-Coin Relay is defective. Replace.</li> </ul>
-Individual coins jam in the coin acceptor or pass through to the coin return.	<ul style="list-style-type: none"> <li>-Coin Acceptor requires maintenance or replacement.</li> </ul>
-Earpiece volume is extremely loud or distorted.	<ul style="list-style-type: none"> <li>-Sidetone Level has been adjusted improperly.</li> </ul>

Symptom	Check these.....
-The Clock in the phone has to be reset regularly or the phone itself has to be reprogrammed from time to time.	-PCB is defective.

## SECTION 6

## GLOSSARY

0 + Calls Calls that are dialed 0 + the phone number that require operator assistance such as collect or credit card calls.

0 - Calls Calls where the caller dials 0 and waits for operator assistance.

1 + Calls Normal long distance calls.

AT&T American Telephone and Telegraph company. Provides long distance services.

COCOT Customer Owned Coin Operated Telephone.

Crossbar A type of relay used in a telephone central office that makes connection between different telephone circuits.

D.A. Directory Assistance.

DTMF The tones used to dial phone numbers. (Dual Tone Multiple Frequency)

ESS Electronic Switching System. A type of telephone central office circuitry.

EPROM Erasable Programable Read Only Memory. A semiconductor memory integrated circuit used to store computer data.

GTE General Telephone and Electronics. Makes phone equipment and provides phone service.

I.D.# Identification number. Used to identify specific payphones.

LCD Liquid Crystal Display. Used to show data to help program payphones.

MCI Microwave Communications Inc. Provides long distance service.

Modem Modulator - Demodulator. A device that transmits and receives tones that are encoded to carry digital data for computers.

NPA The Area Code part of a rate chip part number or the area code part of a phone number.

NXX The prefix part of a rate chip part number or the prefix part of a phone number.

NTS	National Telephone Services. Provides operator services using live operators and giving a commission to COCOT phone owners who subscribe to that service.
PBX	Private Branch Exchange. A switchboard used in large business offices.
PCB	Printed Circuit Board. An electronic circuit board that uses etched copper interconnections between the devices mounted on the board which is often made of fiberglass.
RAM	Random Access Memory. A semiconductor integrated circuit device that is used for read - write memory in computers.
Rate Chip	A memory device either RAM or EPROM that contains the data to determine what long distance charges will be made between two telephones.
Ring	One wire in a telephone line. The other wire is called the Tip.
Sidetone	The portion of audio energy produced by the telephone microphone that is fed back to the receiver so that the person talking can be assured that the telephone is working.
Tip	One wire of a telephone line. The other wire is called the ring.
Telco	An abbreviation for telephone company.
Wild Digit	A character that can be used to replace any number. * and # are wild digits in Amway payphones.

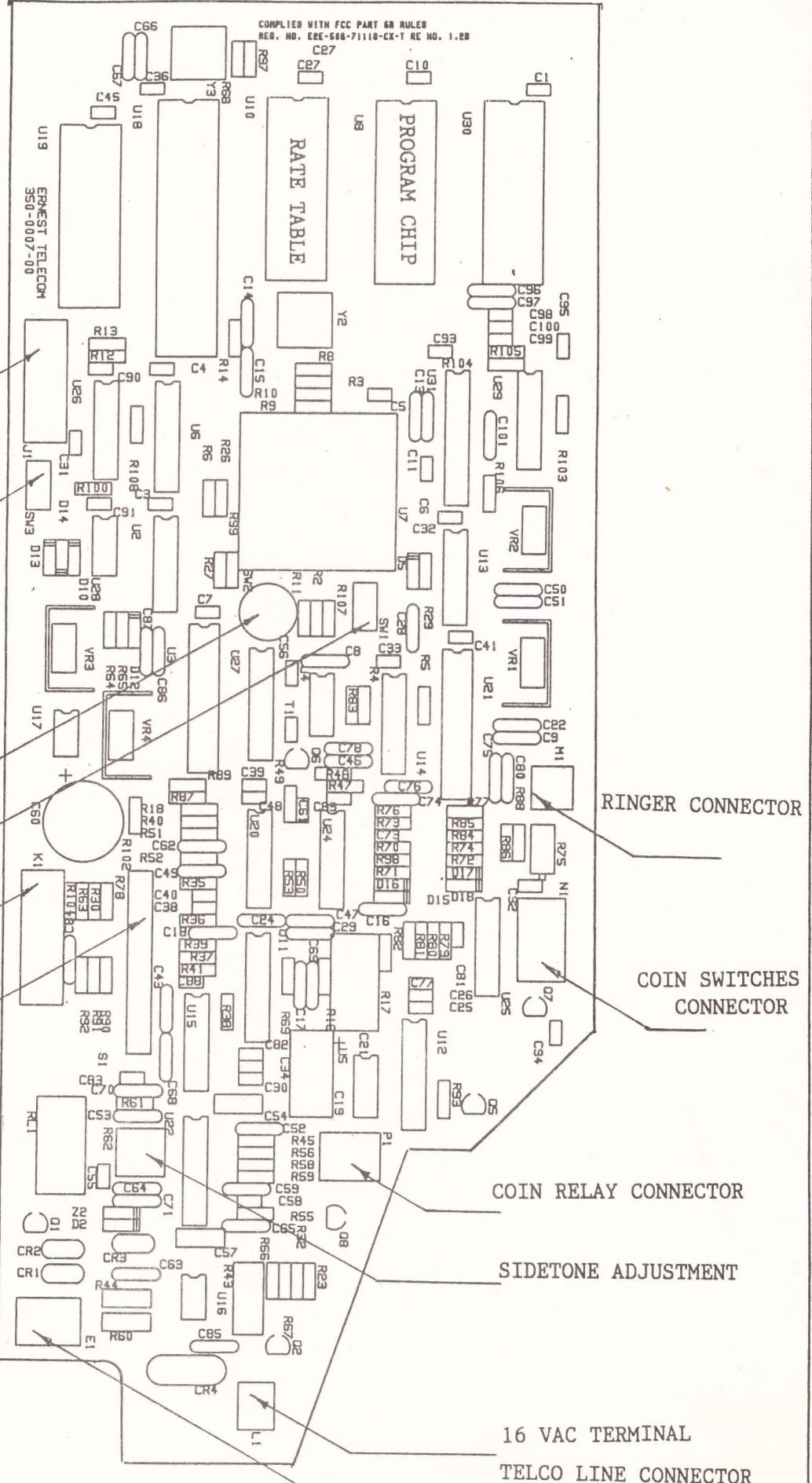
**Upper Housing Terminal Board**

:	3		1		9		10	:
:	--		--		--		--	:
:	++		++		++		++	:
:								
:								
:	2					11		:
:	--		--		--		--	:
:	++		++		++		++	:
:								
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:	4					12		:
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:	++		++		++		++	:
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:	8	A		B		16		:
:	--		--		--		--	:
:	++		++		++		++	:
:								
:								

Rear  
View

Handset	Terminal	Hook Switch	Terminal
Yel	4	Red/Wht	3
Red	6	Pink	11
Blk	B		
Grn	15		

PCB Cable	Term	PCB Cable	Term	PCB Cable	Term
Red	1	Yel	2	Brn/Yel	3
Red/Blk	4	Blk	6	Brn/Blu	7
Blu	8	Red/Yel	9	Grn	10
Red/Blu	11	Brn/Grn	12	Brn/Wht	13
Red/Grn	14	Red/Brn	15	Brn/Blk	16
Wht	B				



THE PAYPHONE COMPANY

COMPONENTS LAYOUT

#### GTE KEYPAD CONNECTOR

RESET SWITCH

## KEYPAD SELECTOR SWITCH

## LCD DISPLAY CONNECTOR